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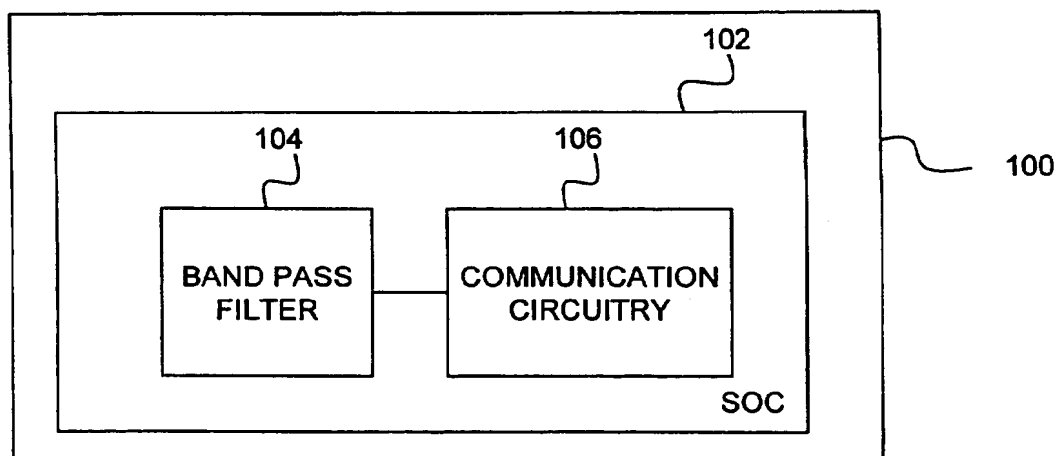
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(54) Title: INTEGRATION OF FILTERS USING ON-CHIP TRANSFORMERS FOR RF AND WIRELESS APPLICATIONS



(57) Abstract: A band pass filter (114) is formed on an integrated circuit (IC) chip (102). Such band pass filter (114) may be used in a RF or wireless communication device, such as a mobile phone or a personal data assistant (PDA). The band pass filter (114) includes a transformer (202 and 204) made of a pair of metallic spirals formed on the IC chip. The metallic spirals may have substantially square or rectangular overall shape, and may be fabricated using copper. The metallic spirals may be co-planar and inter-wound or may be stacked, one on top of the other, and separated by a dielectric layer. The transformer (202 and 204) is capable of receiving an input signal, and providing high pass filtering to the input signal. The band pass filter (114) also includes a capacitor (226, 2; 8, 230 and 232) that is capable of receiving the input signal and providing low pass filtering in conjunction with an inductance of the transformer (202 and 204). The band pass filter (114) provides band pass filtering through cascading said high pass and low pass filtering.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/05133

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H 01P 1/203

US CL : 156/250; 29/830; 257/259,E27.116.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 156/250; 29/830; 257/259,E27.116.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST search (USPAT,USPG,EPO,JPO,IBM,DERWENT)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 6,014,386 A (ABRAHAM), 11 January 2000 (11.01.2000), column 7, lines 52-67, column 9, lines 3-49, column 10, lines 39-49, column 15, lines 25-57.	1-10, 12-30
Y,P	US 6,045,893 A (FUKUSHIMA et al.), 4 April 2000 (04.04.2000), column 1, lines 5-24, column 4, lines 53-67.	1-11, 13-30
Y,P	US 5,949,299 A (HARDA), 7 September 1999 (07.09.1999), column 2, lines 8-52	1,11-13,22

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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